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Policy Brief

Flying blind? Why EU administrations need better data and analytical capacities

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To achieve some recent EU priorities, such as boosting clean tech manufacturing, reducing energy prices, or strengthening economic resilience, policy makers are intervening more actively in the economy. Getting these types of policies right requires a thorough understanding of the respective business environment, technologies, and market developments. This policy brief argues that the EU level lacks the data and the analytic capacities that are needed to achieve this understanding. The next EU Commission should address these shortcomings by collecting more data in the narrow areas subject to vertical government intervention, by improving how data gets collected, and by dedicating more staff to data-driven analyses.

1. Introduction

EU policy makers have started to intervene more in the economy, but too often they are flying blind. To achieve some recent EU priorities, such as boosting clean tech manufacturing, reducing energy prices, or strengthening economic resilience, policy makers are intervening more actively in the economy, often subsumed under the term 'industrial policy'. While industrial policy has its critics, policy files like the Net Zero Industry Act (NZIA) and the Chips Act have won majority backing among co-legislators and become law. Regardless of what position one takes on their underlying economic concepts, these EU initiatives should be designed and executed as well as possible. Given that vertical government interventions[1] are at the core of these laws, a thorough understanding of the business environment, technologies and market developments is needed.

1 In this policy brief, 'vertical' policy measures denote those policies that are aimed at supporting / regulating narrow parts of the economy (e.g. a particular industry such as wind turbine manufacturers), in contrast to more 'horizontal' policy measures, which improve conditions for the whole economy, or very wide parts of it.

This understanding, in turn, requires a solid data basis, as well as sufficient administrative capacity to properly analyse this data. At EU level, both are currently lacking. Without them, policies will contain mistakes that could have been avoided, and member states will mistrust that the EU level can deliver on the ambitious objectives in these sensitive areas.

Given that these types of policies will feature prominently on the agenda of the next EU legislative cycle, they must be grounded on the best analytical footing possible. To enable this, the Commission should take the following three steps:

- Collect additional data, in the narrow areas subject to vertical government intervention;
- work together with member states to build a data infrastructure that allows more frequent and granular transmission of data that is already being collected from the national level;
- dedicate more staff to conducting data-driven analyses.

2. Why reaching EU objectives requires more data and thorough analyses

To design, execute and monitor some key EU policies, public administrations must answer analytically complicated questions. Take clean technology manufacturing. The EU has decided politically to increase domestic production, to reduce its dependency on Chinese clean tech and react to subsidy schemes in third countries, such as the US Inflation Reduction Act (IRA). Given that improving horizontal conditions is deemed to be insufficient to achieve this, more targeted support and intervention has been deemed necessary and this has been the impetus for the Net Zero Industry Act.

However, designing this targeted support requires finding the answers to some analytically complicated questions. For instance: Which clean technologies, if any, should receive manufacturing subsidies? Perhaps subsidies for the wind component industry are a good idea – but not for the solar panel industry, where EU production will most likely remain much more expensive than its Chinese equivalent? If the production of certain clean technologies is subsidised, how many jobs would this create, and are there enough skilled people to scale up production quickly? How difficult and expensive is it for the EU to diversify its imports of solar products, given capacity build-up in India and the US? If a more flexible state aid framework allows member states to disburse large subsidies, how big are the negative and positive spillovers, and resulting distortion on the single market? Should support be centred on R&D, or on production?

While the answers to these questions are, in the end, political, they should be informed by the best empirical basis. But for the time being, the available data and analytical capacities in the EU administration are not sufficient for this purpose, and the impact analyses and staff working documents compiled by the Commission often fall short. The table below categorises key questions for clean tech according to the different steps in the policy-making process; these are defined here as 1) identifying the problem and setting the objective, 2) identifying the mechanism to achieve the objective, and 3) monitoring and evaluating the policy's progress. As shown in the table, for many crucial questions, the available data is inadequate and numerous important analyses have not been conducted.

Consider, for instance, the first question in the table: How much cost pressure do foreign subsidies (like those in the IRA) exert on EU manufacturers of batteries, solar PV, wind components, and electrolysers? Despite its relevance and the acute political interest in finding a satisfactory answer, lack of data has stymied the analytical efforts. As shown in the second column, a solid answer would require data on how much state aid is already available for clean tech manufacturers in the EU, as well as how high structural manufacturing costs

are here, and how these compare to the US or China. As described in the third column, this data is not available to the necessary degree. Because of this uncertainty, the magnitude of the problem posed by the IRA and Chinese subsidies for the EU remains unclear, which is at least partially responsible for the fact that the EU still lacks a sound strategy for clean tech manufacturing.

Table 1: Data and analyses needed to inform EU clean tech manufacturing

Data needs for step 1: identifying the problem and setting the objective I.e. what is the market failure to be corrected, the threat to respond to, or the opportunity to be captured?		
Questions that should guide EU clean tech policy (non-exhaustive)	**Examples of data sources / analyses that should inform these questions**	**Already available?**
How much cost pressure do foreign subsidies (like IRA) exert on battery / solar / wind component / electrolyser manufacturers in the EU?	Data on available subsidies for manufacturing of each clean technology in the EU by member states and by EU level	**Insufficient: not granular enough, not timely enough** Only some state aid must be notified and is officially registered. This register captures only the notified aid volume, not how much is actually disbursed, which is often much less. The State Aid Scoreboard is based on reports submitted by member states and provides a more comprehensive picture. However, the scoreboard has a long time gap: for the year 2021 it was published only in April 2023. Moreover, the data categories are too coarse (the 18 'main objective' categories do not allow to identify state aid in e.g. wind turbine manufacturing).
	Data on manufacturing costs in EU and abroad for various clean technologies	**Mostly unavailable** Some data is available through EU industrial alliances, from consultancies (e.g. McKinsey solar manufacturing report or Roland Berger study), from industry associations (e.g. WindEurope) or from international organisations (IEA 1, 2). But the available data does not sum up to a comprehensive picture, and neither the NZIA SWDs (1,2) nor the Commission's clean tech competitiveness report contain sufficient information on EU manufacturing costs. It is hence not clear how EU costs compare to other world regions like the US, India or China.
	Data on foreign subsidies (like IRA) and their impact on companies' business case	**Partly available, but only from external sources** Compiled by consultancies and think tanks (e.g. 1,2,3,4), but no (public) Commission analysis available, and not comprehensively included in NZIA SWDs (1,2) nor the communication on the IRA impact.

What is the economic and technical starting point of the various clean tech industries in the EU? What would be a feasible 2030 target?	Data (qualitative or quantitative) on where the EU is close to technological frontier / has comparative advantages	**Sufficiently available** Covered qualitatively in the COM clean tech competitiveness report, in the EU Clean Tech Observatory, or in assessments by industry associations.
	Data on factory capacities in EU and foreign countries for various clean technologies	**Partly available** In concentrated industries, companies' annual reports give some indication (e.g. wind turbines). Industry associations provide some data (e.g. the 'manufacturing map' for solar). Press releases from individual companies can, when aggregated, also help better understand planned factory capacity. However, overall, data is patchy and often outdated.
	Economic analyses on credible future path for each clean tech industry until 2030	**Insufficiently analysed** The calculation in the SWD of investment needs does not take into account that the business case for EU clean tech is directly impacted by foreign subsidies and structural cost differences. No credible analysis how to achieve the NZIA objectives has been conducted. Thorough private sector analyses are lacking as well.
How large and profitable is the future market for various clean tech industries?	Future market sizes and profit margins	**Sufficiently available** Market research institutes regularly estimate and publish future market sizes (commercially available). While estimations are subject to high uncertainty, the available data suffices to identify likely profitable markets, and it would be difficult for the EU administration to substantially improve upon it.
	Rigorous analyses whether domestic manufacturing of clean tech helps EU economy, EU resilience, and/or global climate efforts	**Insufficiently analysed** No thorough impact analyses were conducted on the climate, resilience, and economic effects resulting from supporting domestic clean tech manufacturing.
How high is the risk that the EU will not be able to import, at low prices, sufficient volumes of clean technology, because of geopolitical tensions?	Trade data to indicate current dependencies	**Sufficiently available** Available via multiple data sets, including COMEXT.
	Data and analyses on ease of diversification, incl. data on future global market shares, and potential oversupply	**Only available for today, not for future** Only limited data and analyses available on how dependencies will develop. On solar, for instance, the EU's current dependence on China might be less problematic than often depicted, given the global overcapacity of solar factories, and given that factories are also being built in India and the US. Data and analyses on how this impacts the EU are lacking.
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Data needs for step 2: identifying mechanism to achieve objective		
Questions that should guide EU clean tech policy (non-exhaustive)	**Examples of data sources / analyses that should inform these questions**	**Already available?**
How high are the absorption capacities in member states? i.e, what additional volume of EU funds disbursed as subsidies via member states to companies, can be absorbed? How does this compare with other mechanisms like tax credits?	Data and analyses of investment absorption capacity in member states (e.g. the speed of outflow of funds; the number of staff employed to request state aid per € of aid disbursed, etc)	**Insufficient data and evidence**, given the importance of the issue
If state aid rules are made more flexible to allow member states to subsidize, what is the expected effect on the integrity of the Single Market? If instead EU funds are used, which companies / regions will likely benefit most under different criteria?	Granular break-down of state aid data	**Insufficient: not granular enough** (see table above for description)
	Data on existing factory capacities in EU	**Partly available** (also needed in step 1)
How much would speeding up planning and permitting procedures (which can often take years in the EU) boost domestic production?	Data on duration of planning and permitting procedures	**Not available yet** (but requested in NZIA)
What would be the likely impact of protectionist measures (e.g. in public procurement), if e.g. Chinese retaliation triggered?	Analyses of dependences vis-à-vis China and other nations	**Exists sufficiently** Trade data (e.g. COMEXT) indicates current dependencies
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Data needs for step 3: monitoring and evaluating the measure's progress to allow to exit or amend the measure, and inform future measures		
Questions that should guide EU clean tech policy (non-exhaustive)	**Examples of data sources / analyses that should inform these questions**	**Already available?**
How are volumes of national subsidies for clean tech distributed, and how large is the distortion on the single market?	Granular break-down of state aid data	**Insufficient** (see above for description)
Are factory capacities being built?	Data on manufacturing capacity additions in each member state	**Sufficient**, going forward. Monitoring requirements for member states are defined in NZIA (Article 31)
How high are investment costs, production costs and prices of clean technologies?	Data on costs and prices in each member state	

How long do permitting procedures for clean tech take?	Data on average duration of permitting procedures for building clean tech factories	
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While the above table highlights clean technology as an example, similar data and analysis gaps impede other EU policy priorities. For instance, the EU is proposing a strategy to increase **economic security**. But to design effective policy measures in this space, the EU needs a better understanding of critical supply chains than it now has, and this in turn is hampered by lack of data generally, as well as insufficient data sharing from member states to an EU-level body.

Another example is **semiconductors**, where boosting manufacturing and monitoring supply disruption risks requires both better data and deeper analyses. The Chips Act gives the Commission the right to request data from companies in case of a supply crisis. However, absent a crisis, the monitoring framework put in place is rather rudimentary; for instance, the grandiose-sounding "Semiconductor Alert System" turns out to be nothing more than a website on which companies are invited to submit a form should they be aware of supply disruptions.

The **energy transition** is another policy area where better data is needed. For instance, there is paltry interoperable data on how much industry is paying for energy, on which transmission lines were congested, or even on the number of power plants. **In sum: several EU priorities are held back by insufficient data and analyses.**

3. Fixing the EU's three data problems

The lack of data and analytical capacity, both at national and at EU-level, poses a problem for effective policy making. At EU-level, it is informative to distinguish three types of problem:

First, some datasets are simply not available yet. The EU bureaucracy is often depicted as data-hungry and requesting heaps of information from companies and member state governments. There is some truth to this claim, with various EU bodies and agencies, like Eurostat or the Environmental Agency, already collecting data. But for some of the new EU policy priorities, the available data is patchy at best, as shown in the section above. Moreover, the EU Commission and politicians receive information from their close exchanges with industry (e.g. through industry alliances and the Clean Transition Dialogues). While this way of retrieving information is useful and necessary, it comes with substantial risks around political capture and might be biased. It is hence crucial that information provided from companies is complemented with data that is collected from more independent sources where possible.

EU laws partly recognize the need for additional data, and in some of the recent acts, member states are mandated to collect and transmit fresh data. In the NZIA proposal, for instance, Article 31 specifies that member states must transmit data on production costs, capacity additions, market prices, etc., each year. The NZIA also sets up the "Net Zero Europe Platform", which aims to facilitate exchanges of information between private sector and public administrations. The EU Chips Act likewise specifies various monitoring obligations (Article 19, 20). These are important steps in the right direction. However, information requests in the law that sets up the policy measures can only help monitor progress and cannot inform the design of the measures in the first place.

***Recommendation 1*: The EU Commission should collect more data to inform and monitor its new policy objectives.** If the EU is serious about reaching some of its own objectives, it must start collecting more data.

First, this applies to areas that are already a political priority. For instance, as outlined above, EU bodies should collect more data on clean tech manufacturing and on energy (potentially through establishing an EU energy agency).

Second, more data also needs to be collected in areas that are bound to be in the political focus in the coming years. For instance, the EU and member states have repeatedly expressed the goal that the EU must aim to remain / become a leader on biotech. If member states indeed want the EU-Commission to put in place effective measures to boost EU biotech, the EU Commission needs the data that allows it to deeply understand this sector and its bottlenecks.

Third, the EU must improve its ability to collect data more quickly on an ad-hoc basis, if needed. Ex ante, it is not always clear which areas will become subject to government intervention and what data will be needed. Hence, a mechanism is needed that allows the EU Commission to collect data more quickly, so as to inform the design of policy measures. This entails equipping the Commission with sufficient financial resources if data must be collected commercially, as well as the power to request data from member states on short notice if needed. However, to ensure that the costs and effort associated with data collection are commensurate to the benefit, a scrutiny mechanism is needed. One option would be that the Council must explicitly task the Commission to conduct urgent analyses in case of unexpected developments (such as the energy crisis triggered by the war in Ukraine, or the passing of the IRA). In these situations, the Commission would receive the power to request data from member states and, if needed, companies, which would have to submit the data within a short time frame.

Second, some data is collected, but not in a format suitable for the analyses required. This can be illustrated with state aid data. With the General Block Exemption Rules and other exceptions, substantial amounts of national subsidies are not notified to the Commission and hence fly under the radar, at least initially. Moreover, the volume of notified aid is not the same as disbursed aid – many countries, like Germany, notify very large schemes, and then spend just a fraction of the notified volume. While DG COMP knows the volume of notified aid, its knowledge of how much is actually disbursed is more limited. The annual reports on disbursed state aid that member states submit remedy this somewhat, but the data has a lengthy time lag (~2 years). Moreover, the classification system of state aid is quite coarse, and does not allow to properly track how much member states have been spending on many individual areas that are or should be of interest. Taking again clean tech manufacturing as an example: Nobody knows how much was spent on subsidies last year for the various clean technologies in the EU, and how they stack up compared with IRA subsidies.

Hence, while state aid data is already being collected, its format and time-lag prevent it from being used effectively to inform decision-making. Similar problems exist for other data, for instance on energy, which is collected but often difficult to compare across member states, and moreover has time-lags.

***Recommendation 2*: The EU Commission should work together with member states on building a more modern data infrastructure that allows more automated, granular, and frequent data transmission from the national level.** Beyond reducing the time gaps and ensuring that collected data is fine-grained enough to be usable for analysis, this will increase the level of interoperability of data submitted by different member states and sources.

This is particularly urgent for state aid data. To inform decisions, state aid data should be transmitted more frequently, which can only be done with reasonable effort if information collection and transmission are more fully automatised. Furthermore, a more digital data infrastructure will allow member states to transmit more, and more granular, state aid data. This allows that state aid volumes can be re-grouped and re-categorized ex-post, instead of being restricted to the 18 broad categories currently used.

A modern data infrastructure will also enable actors to publicly disclose the analytical basis for decision-making, thereby increasing transparency and accountability as regards spending taxpayer money.

Third, capacities to analyse data are lacking, with too few staff dedicated to compiling evidence-based analyses. In the United States, the Chips Act provides up to 2% of the total budget to the Department of Commerce for administering the act. With up to $50bn available under the Act, this amounts up to a whopping $1bn over the lifetime of the bill, with over 140 staff already hired. In Germany, the ministry of economics recently negotiated contracts with Intel and TSMC, spending €10bn and €5bn of subsidies on a single factory, respectively. Despite these impressive sums and the cases' high complexity, only a handful of people in the German ministry work on semiconductors and chips. The staffing situation is similar or even more severe in other member states, especially in countries with small administrations. If even the EU's largest member state does not have sufficient staff, a sensible solution is to centralise some staffing needs at EU level. However, while the Commission has staff conducting analytical work (e.g. in the Joint Research Centre), there are neither dedicated teams nor a clear mandate to ensure a sufficient analytical understanding of the areas subject to government intervention in some of the new policy priorities. For instance, the NZIA aims to support domestic solar manufacturing, but the associated economic, resilience and climate costs and benefits of doing so have been insufficiently analysed, partly because there are too few dedicated staff.

***Recommendation 3*: The EU Commission should dedicate more staff to providing the analytical underpinning of key EU priorities, setting aside some additional funds for staff.** Not everything needs to be done at EU-level – but if a political consensus is reached that the EU-level should deliver on a new priority, and if that policy entails vertical intervention (such as with clean tech manufacturing, for instance), it must be ensured that the EU-level has sufficient staff to do the required analytical work. If the policy comes with a budget, a certain percentage of this budget should be reserved for analytical work and for hiring temporary staff.

Additionally, the funds available for permanent analytical staff should be increased. This allows to quickly react and analyse new developments, before a budget line can be created. Moreover, permanent staff are needed for policies that may not have a budget (such as trade measures, for instance), but still need analysis.

The fact that the EU Commission has been given many more tasks in the last few years by the member states must be reflected in staffing numbers, given that many tasks are analytically demanding.

4. Conclusion

As of now, the approach for providing the analytical basis for decisions on new policy priorities, such as industrial policy, is rather ad-hoc and idiosyncratic. Public administrations, including the EU Commission, should put in place a more explicit strategy for using data in policy-making. As argued above, this entails three building blocks, namely i) collecting additional data, ii) building a data infrastructure that allows more frequent and granular transmission of data that is already being collected from the national level; and iii) more staff to properly analyse the data. Of course, even with these improvements, uncertainty will remain. The objective, accordingly, is not to eliminate the inherent risk of political decisions, but to ground policies on the best available information.

Making these improvements costs time and money and may also put a small additional burden on some companies. But these efforts are needed, given the nature of government intervention part of the Net Zero Industry Act, the Chips Act, the Economic Security Strategy, or in energy markets. Because these interventions will leave an important mark on the structure of the EU economy, it is an investment that will pay off.

Finally, governments and the Commission often must act swiftly, and additional data collection and analyses should not slow down the roll-out of policies. However, typically there is no trade-off between a speedy roll-out and ensuring that the decisions have a better analytical basis. For instance, the US IRA, which was part of the impetus for the NZIA, passed the US Congress in summer 2022, and the EU institutions have only just agreed on the legislative file. In the last year-and-a-half, there would have been ample time to compile more evidence and conduct deeper analyses to improve the NZIA and future EU initiatives on clean tech.

Digitalising administrations and using data to inform policy-making is difficult. By and large, the EU public sector is still much less data-savvy than it should be. Now, it is high time to advance on this front, given that the new policy objectives require EU administrations to boost their analytical capacities and thereby enhance proper delivery.

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